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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,279	02/02/2004	Pietro Arturo Bernasconi	Bernasconi 6-4 (LCNT/1262)	2208
46363	7590	12/28/2005	EXAMINER	
PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			WONG, TINA MEI SENG	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/770,279

Applicant(s)

BERNASCONI ET AL.

Examiner

Tina M. Wong

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07 December 2005 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 9-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al.

In regards to claims 1, 3, 7, 9, 10, 11, 13 and 14, Dingel et al discloses polarization beam splitter (330) coupled to an arrayed waveguide grating, AWG, (Figure 6), where the AWG includes a star input coupler (20), a star output coupler (60) and a plurality of waveguides of unequal lengths. Dingel et al further discloses the input signal to be split by the AWG. (Column 5 Lines 55-65) Dingel et al additionally discloses the n-way coupler/splitter to be controllable to alter the branch signals by using and electro-optic effect. Although Dingel et al does not explicitly state a passive and active portion, where the active portion modifies at least one polarization component, Applicant further states in the Specification that a polarization splitter

comprising opto-electronic devices is operable with passive and active portions. Therefore, Dingel et al discloses the active portion modifying at least one polarization component.

But Dingel et al fails to specifically disclose the input signal to arrive at different phase fronts of a free space region at the output side of the AWG, where the AWG splits the first and second polarization components. However, Dingel et al disclose a polarization beam splitter to split the optical signal into different branches based on polarization. Therefore, although Dingel et al does not explicitly state splitting the optical signal into different polarization components, it would have been obvious at the time the invention was made to a person having ordinary skill in the art since Dingel et al does disclose a polarization beam splitter equip with the function to split an input optical signal into different breaches based on polarization.

In regards to claims 4 and 5, Dingel et al discloses an input coupler to comprise of a star coupler. But Dingel et al fails to disclose the input coupler to comprise of a slab waveguide lens. However, Dingel et al does disclose the input coupler to be a slab coupler. Furthermore, Applicant states slab waveguide lenses have substantially similar functions as a star coupler and therefore can be used in place of star couplers. (Specification, Page 4 Line 32- Page 5 Line 2) Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used either a star coupler or slab waveguide lenses since Applicant states they perform the substantially the same function.

In regards to claim 6, Dingel et al discloses the apparatus to perform at least one of the wavelength multiplexing or demultiplexing for input signals.

Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al as applied to claims 1 and 10 above, and further in view of U.S. Patent 6,853,769 to McGreer.

In regards to claims 2 and 12, Dingel et al fails to explicitly disclose the polarization components to comprise a TE mode and a TM mode. However, McGreer discloses the TE and TM polarization modes to be two principle modes. The TE and TM modes commonly exist within a signal when separating the modes by a polarization splitter. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for a signal having polarization components to have a TE mode and a TM mode.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al as applied to claim 1 above, and further in view of U.S. Patent 5,838,870 to Soref.

In regards to claim 8, Dingel et al fails to disclose the polarization splitter to be fabricated from waveguides with a shallow etched buried rib structure and a thin film MQW on top of the rib structure. However, Soref discloses splitting waveguide signals where the waveguides are formed by etching and being placed in MQW layers. Therefore, since Dingel et al simply discloses a general polarization splitter and Soref discloses the details of the polarization splitter with waveguides, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the polarization splitter to be fabricated from waveguides with a shallow etched buried rib structure and a thin film MQW on top of the rib structure.

Response to Arguments

Applicant's arguments filed 07 December 2005 have been fully considered but they are not persuasive.

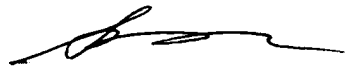
Applicant argues Dingel et al does not teach active and passive portion integrated with the polarization beam splitter. However, the Examiner disagrees. As discussed in the above rejection, Dingel et al discloses modifying a branch signal by using electro-optic effects. Applicant also discloses modifying a polarization component by electro-optic effects with an active element. Therefore, by following the same steps as Applicant, Dingel et al also modifies the signal with an active component. Although Dingel et al does not specifically state the AWG as a passive device, by interpreting the specification, the AWG carries signals from the input port to the output port without modifying the signal and therefore would be a passive device. Lastly, although Dingel et al does not state the active and passive portions to be integrated with the polarization beam splitter, the definition of integrated is "to make into a whole by bringing all parts together; unify." (*The American Heritage® Dictionary of the English Language, Fourth Edition*) Dingel et al does disclose a unified optical device and therefore, Dingel et al discloses an integrated device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Handwritten signature of TMW, consisting of stylized cursive letters with 'TMW' printed in a sans-serif font below the signature.Handwritten signature of Sung Pak, consisting of stylized cursive letters.

Sung Pak
Primary Examiner